

REMARKS

In the Office Action claims 1-14 were rejected. By the present Response, claims 1 and 7 have been amended. Upon entry of the amendments, claims 1-14 will remain pending in the present patent application. Reconsideration and allowance of all pending claims are requested.

Rejections Under 35 U.S.C. § 102

In the Office Action, claims 1, 2, 5, 7-9, 13 were rejected under 35 U.S.C. § 102 (e) as being anticipated by Nelson (U.S. Patent No. 6,689,500, hereinafter "Nelson"). Claims 1, 2, 5-9, 13 and 14 were rejected under 35 U.S.C. § 102 (b) as being unpatentable over Jones et al. (U.S. Patent No. 5,998,054, hereinafter "Jones").

Applicants have amended the independent claims 1 and 7 to recite the subject matter more clearly. No new matter has been added. Applicants also believe that the language "*allow a flow of a fluid from the upper channels through the lower channels*" in the independent claims 1 and 7 merits patentable weight and Applicants have amended the independent claims 1 and 7 to imply more clearly that this recitation reflects the actual structure of the device. Applicants request the Examiner to review the claim analysis in view of the amendments.

Independent claims 1 and 7

Nelson and Jones do not teach parallel upper and lower channels or a parallel flow of a fluid from an upper channel through lower channel, where the channels do not form a part of the fuel cell electrode.

With respect to Nelson, the Examiner stated on Page 3 of the Office Action that:

The cathode plate has a cathode reactant surface and a cathode cooling surface opposite the cathode reactant surface. The anode plate has an anode reactant surface and an anode cooling surface opposite the anode reactant surface.

Applicants respectfully submit that the cooling surfaces in Nelson, as referred by the Examiner, are actually an integral part of the anode and/or the cathode. These are depicted generally in Fig. 4 of Nelson. The cooling surfaces in Nelson are not described as ribs or channels, unlike the cooling channels as recited in independent claims 1 and 7 of the present application. In addition, Nelson is completely devoid of any disclosure, teaching or suggestion regarding upper ribs coupled to an upper section or lower ribs coupled to a lower section of a base plate as recited in independent claims 1 and 7.

The description of the fuel cell in Nelson, particularly in a passage found at column 6, lines 55-65, clearly demonstrates that the cooling surface and cathode are integral to each other.

As shown in FIG. 4, ***reactant surface 27 of cathode cooling plate 20 has cathode channels 28a, 28b, 28c, 28d*** which receive cathode air from cathode air inlet ports 68a, 68b, 68c, 68d. The cathode channels 28a, 28b, 28c, 28d are open faced so as to expose the cathode air to the membrane electrode assembly. Cathode channels 28a, 28b, 28c, 28d weave back and forth over reactant surface 27 so as to expose the maximum area of the membrane electrode assembly 18 (FIG. 1) to the cathode air. The other end of the cathode channels 28a, 28b, 28c, 28d are connected to outlet passthroughs 70a, 70b, 70c, 70d. (Emphasis added.)

The same is true for Nelson's anode. Thus, Nelson teaches a cooling surface that also functions as a cathode or an anode. Amended independent claims 1 and 7 clearly distinguish this aspect by reciting that "*the cooling apparatus is not configured to be a fuel cell electrode*".

With respect to Jones, the Examiner, on page 4 of the Final Office Action mailed on August 11, 2006 had agreed that Jones does not teach upper channels and lower channels in a parallel arrangement. Applicant also submits that the Examiner did not respond to the Applicant's arguments with respect to Jones in the more recent office Action mailed on December 7, 2006.

The Examiner has now referred to elements 140" and 124" in Jones as a teaching for upper and lower channels. It is clear from Fig. 2 in Jones that the passage 140, and therefore passage 140", is a manifold leading gas to passages 124 (or 124" in the case of manifold 140") and not lower and upper channels as wrongly construed by the Examiner.

Therefore, Applicant respectfully submits that the independent claims 1 and 7 are not anticipated by Nelson or by Jones under 35 U.S.C. §102 (e) or under 35 U.S.C. §102 (b), and that the dependent claims are similarly allowable.

Rejections Under 35 U.S.C. § 103

Claims 6 and 14 were rejected under 35 U.S.C. § 103 (a) as being unpatentable over Nelson in view of Kusunoki (U.S. Patent No. 5,789,094, hereinafter "Kusunoki").

Claims 3, 4, 6, 10-12 and 14 were rejected under 35 U.S.C. § 103 (a) as being unpatentable over Nelson in view of Bunker (U.S. Patent No. 7,022,429).

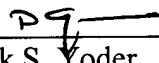
Applicant respectfully submits that the primary reference of Nelson does not anticipate or render obvious independent claims 1 and 7, as discussed under the 102 arguments. Therefore, irrespective of what the secondary references of Kusunoki and Bunker may teach or not teach with respect to the dependent claims, the dependent claims are similarly allowable at least by virtue of their dependency from an allowable base claim.

Conclusion

In view of the remarks and amendments set forth above, Applicant respectfully requests allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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